CLAIMS

We claim:

1. A composition for performing nucleic acid amplification that avoids undesirable reactions between the individual reagents, comprising one or more reagents necessary to perform nucleic acid amplification and an inhibitory concentration of a reversible inhibitor(s) of the undesirable reaction, wherein:

a) the nucleic acid amplification is selected from the group consisting of ligase chain reaction (LCR), transcription mediated amplification (TMA) reaction, nucleic acid sequence based amplification (NASBA) reaction and strand displacement amplification (SDA) reaction; or

b) the inhibitor inhibits nucleic acid amplification; or

c) the inhibitor is not a lipid; or

d) the inhibitor does not compartmentalize the composition.

2. A method of amplifying a nucleic acid, comprising:

adding a nucleic acid template to be amplified to the composition of claim 1, and optionally a diluent in sufficient amounts to lower the inhibitor concentration to such that it does not substantially inhibit the amplification reaction; and

incubating the mixture under conditions sufficient to achieve amplification.

3. A method for preparing a composition for performing nucleic acid amplification that avoids undesirable reactions between individual reagents, comprising mixing one or more reagents necessary to perform nucleic acid amplification with a reversible inhibitor(s) of the undesirable reaction, wherein the inhibitor is added to the composition at a concentration that is inhibitory to the undesirable reaction but at a concentration which will be non-inhibitory when the composition is later diluted for nucleic acid amplification, and wherein:

a) the nucleic acid amplification is selected from the group consisting of ligase chain reaction (LCR), transcription mediated amplification (TMA) reaction, nucleic acid sequence based amplification (NASBA) reaction and strand displacement amplification (SDA) reaction; or

b) the inhibitor inhibits nucleic acid amplification; or

c) the inhibitor is not a lipid; or

d) the inhibitor does not compartmentalize the composition.

4. The composition of claim 1, which comprises one or more nucleic acid polymerase(s) or ligase(s), one or more nucleoside triphosphate(s), one or more nucleic acid primer(s) and an amplification buffer.

5. The composition of claim 1, which comprises all the reagents necessary to perform a nucleic acid amplification reaction.

6. The composition of claim 1, wherein said inhibitor is a nucleic acid binding ligand.

7. The composition of claim 6, wherein said nucleic acid binding ligand is an intercalator compound.

8. The composition of claim 7, wherein said intercalator compound is monoadduct forming.

9. The composition of claim 8, wherein said intercalactor compound is a furocoumarin or a phenanthridine.

10. The composition of claim 9, wherein said furocoumarin is 4'-aminomethyltrioxsalen (AMT).

11. The composition of claim 9, wherein said furocoumarin is an angelicin derivative.

12. The composition of claim 6, wherein said binding ligand is a non-intercalating compound.

13. The composition of claim 12, wherein said non-intercalating compound is selected from the group consisting of benzimides, netropsins and distamycins.

14. The method of claim 3, wherein said nucleic acid amplification is a transcription based amplification reaction and said inhibitor(s) is a phosphate ion.

15. The method of claim 3, wherein said nucleic acid amplification is a ligase chain reaction and said inhibitor(s) is a phosphate ion at a concentration of 1.25 mM.

16. The method of claim 3, wherein said inhibitor is a nucleic acid binding ligand.

17. The method of claim 16, wherein said nucleic acid binding ligand is an intercalator compound.

18. The method of claim 17, wherein said intercalator compound is 4'-aminomethyltrioxsalen (AMT).

19. The method of claim 16, wherein said nucleic acid binding ligand is a non-intercalator compound.

20. A kit comprising a vial containing the composition of claim 1.

21. The kit of claim 20, wherein the composition comprises one or more nucleic acid polymerase or ligase, one or more nucleoside triphosphate(s), one or more nucleic acid primer(s) and an amplification buffer.

22. The kit of claim 20, wherein said inhibitor is a nucleic acid binding ligand.